REMARKS

Claim Amendments

Applicant has amended claim 8, 14, and 15 to include a bearing surface limitation as supported at least by paragraphs 14, 23, and 29, and figure 1, as depicted as shaft portions adjacent to elements 10 and 11

Applicant has amended claims 8, 14, and 15 to include a single bloc limitation per region. This is supported at least by figure two, wherein the hatching of each region indicates joints/welds between regions, and no joints within a region. This is further supported by the following: "A turbine shaft consisting of three regions in a longitudinal direction affords the possibility of being able to use materials having different properties. A turbine shaft produced **from three regions** is much more beneficial, as compared with a **monobloc** turbine shaft having the same required properties." (Paragraph 15); "In addition, a turbine shaft produced from **three regions** is superior in terms of material to a **monobloc** turbine shaft." (Paragraph 16); and "In a further advantageous development, the middle region may be produced from **a forging steel** having... **The two outer regions** can be **produced** from different materials **in exactly the same way**." (Paragraph 19). Further, the specification as a whole makes it clear the shaft was to be created from three discrete blocs, with no provision of a single region to be made of multiple blocs.

New Claims

Applicant has added claim 16 as supported at least by paragraph 31 of the originally filed specification. Applicant has added claims 17 and 18 as supported at least by paragraph 32 of the originally filed specification.

Applicant's Response to 35 USC 102 Rejections

In amended claim 8 Applicant now claims "a middle region **consisting of a middle bloc**"; "a first outer region **consisting of a first bloc... comprising a first bearing surface** configured to receive a first bearing which mounts the first outer region to the turbine"; and "a second outer region consisting of a second bloc... **comprising a second bearing surface** configured to receive a second bearing which mounts the second outer region to the turbine." In

contrast, Konishi teaches a turbine shaft with four portions. As presented, Konishi teaches a first outer region (1) and a second outer region (3). Second outer portion (3) does not have Applicant's claimed second bearing surface. Konishin teaches a fourth portion (4) which has this bearing surface, but this portion is not "abutting the second end face of the middle region." Thus, Konishi does not teach Applicant's claim 8 limitations. Applicant respectfully requests the 35 USC 102 rejection of claim 8, and claim 9, which depends from claim 8, based on Konishi, be withdrawn.

In amended claim 14 Applicant claims "producing a middle region **from a middle bloc** of a heat-resistant material"; "producing a first outer region **from a first bloc** of a material that is less heat-resistant than the middle region material, **the first outer region comprising a first bearing surface** configured to receive a first bearing which mounts the first outer region to a turbine"; and "producing a second outer region **from second bloc** of a material that is less heat-resistant than the middle region material, the second outer region **comprising a second bearing surface** configured to receive a second bearing which mounts the second outer region to the turbine." Thus, Konishi does not teach Applicant's claim 14 limitations. Applicant respectfully requests the 35 USC 102 rejection of claim 14, based on Konishi, be withdrawn.

Applicant's Response to 35 USC 103 Rejections

Claims 10-13 depend from and include all the limitations of claim 8. Claim 8 survives application of Konishi under 35 USC 102, and since the 35 USC 103 rejection does not teach or suggest the limitations of claim 8 not taught by Konishi under 35 USC 102, claim 8 then survives the 35 USC 103 rejection. Claims 10-13 must necessarily also survive application of Konishi under 35 USC 103 via their dependence on claim 8. Applicant respectfully requests the 35 USC 103 rejection of claims 10-13, based on Konishi, be withdrawn.

Regarding claims 10-13, Examiner states Applicant did not disclose that the limitations "solve any stated problem or is for any particular purpose above the fact that these limitations reduce the amount of chromium needed..." In paragraph [00011] of the originally filed specification Applicant states:

> The turbine shaft must meet particular requirements on account of the various temperatures of the steam. **Heat-resistant properties** are demanded in the inflow region of the high-pressure subturbine. **High long-time rupture strengths under**

> **centrifugal force are required at the ends of the turbine shaft**. Furthermore, good toughness properties and tensile strengths are desired.

In paragraph [00018] Applicant states:

> By a forging steel having 9 to 12% by weight of chromium and a steel having 1 to 2% by weight of chromium being combined, **the problem of increasing long-time depletion under centrifugal force**, occurring above specific parameters, such as, for example, high steam temperatures of more than 565°C, large rotor diameters and high rotational speeds, for example 60 Hz, **is solved**.

Applicant asserts the problems of heat resistance for the inflow region and rupture strengths (long time depletion) under centrifugal force have been disclosed, and that these disclosed problems are included in the reasons why Applicant has chosen and claimed that which has been claimed.

In claim 13 Applicant claims "wherein the middle region material is nickel based." Konishi does not teach or suggest this limitation. In fact, Konishi relies on the middle section being 12Cr steel (column 3, line 44), and thus teaches away from the middle region being nickel based. Applicant respectfully requests the 35 USC 103 rejection of claim 13, based on Konishi, be withdrawn.

In amended claim 15 Applicant claims "a middle region **consisting of a middle bloc**"; "a first outer region **consisting of a first bloc**, the first outer region **comprising a first bearing surface**"; and "a second outer region **consisting of a second bloc**, the second outer region **comprising a second bearing surface**." As argued above, Konishi does not teach these limitations of claim 15. Consequently, Shiga as modified by the rotor shaft of Konishi would not teach Applicant's claim 15. Applicant respectfully request the 35 USC 103 rejection of claim 15, based on Shiga and Konishi, be withdrawn.

(Continued on the next page.)

Conclusion

The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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By: Janet D. Hood

Janet D. Hood
Registration No. 61,142
(407) 736-4234

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, New Jersey 08830